

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sm J. Lee Examiner #: 76060 Date: 8-1-03  
 Art Unit: 1752 Phone Number 30 5-0504 Serial Number: 09/806,852  
 Mail Box and Bldg/Room Location: 9B05 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Photosensitive polysilazane composition & method of forming patterned

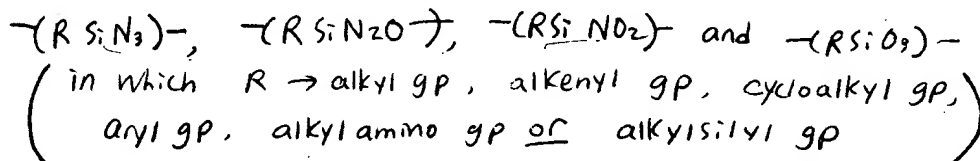
Inventors (please provide full names): Nagahara, Tatsuro; Matsuo, Hideki; Polysilazane  
Aoki, Tomoko; Yamada, Kazuhiro Film

Earliest Priority Filing Date: 6-18-'01

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for a photosensitive composition comprising ① a polyorgano siloxazane of the following formula and ② one of the following phobacid generator peroxide  
nitrobenzyl ester  
a naphthoquinone diazidosulfonate ester

This polyorgano siloxazane contain following repeat units



& this polyorgano siloxazane is produced by reacting ammonia and water with organic halo silane of the formula  $R_n SiX_{4-n}$  (R is alkyl gp, alkenyl gp, cycloalkyl gp, aryl gp, alkylamino gp, or alkylsilyl gp, X is a halogen atom, n is 1 or 2)

## STAFF USE ONLY

Searcher: ES  
 Searcher Phone #: \_\_\_\_\_  
 Searcher Location: \_\_\_\_\_  
 Date Searcher Picked Up: \_\_\_\_\_  
 Date Completed: 8-7-03  
 Searcher Prep & Review Time: 5  
 Clerical Prep Time: \_\_\_\_\_  
 Online Time: 45

## Type of Search

NA Sequence (#) \_\_\_\_\_ STN 7163.87  
 AA Sequence (#) \_\_\_\_\_ Dialog \_\_\_\_\_  
 Structure (#) (1) Questel/Orbit \_\_\_\_\_  
 Bibliographic (and) Link \_\_\_\_\_  
 Litigation \_\_\_\_\_ Lexis/Nexis \_\_\_\_\_  
 Fulltext \_\_\_\_\_ Sequence Systems \_\_\_\_\_  
 Patent Family \_\_\_\_\_ WWW/Internet \_\_\_\_\_  
 Other \_\_\_\_\_ Other (specify) \_\_\_\_\_

## Vendors and cost where applicable

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sm J. Lee Examiner #: 76060 Date: 8-1-03  
 Art Unit: 1752 Phone Number 30 5-0504 Serial Number: 09/806,852  
 Mail Box and Bldg/Room Location: 9B05 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

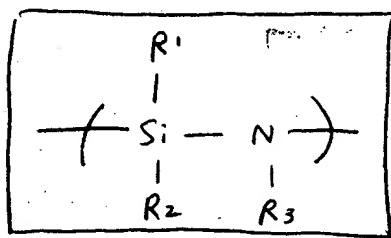
\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Photosensitive polysilazane composition & method of forming  
 Inventors (please provide full names): Nagahara, Tatsuho; Matsuo, Hideki; Aoki, Tomoko; Yamada, Kazuhiro Patterned polysilazane film  
 Earliest Priority Filing Date: 6-18-2001

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for a photosensitive composition comprising ① a polysilazane of the following formula and ② one of the following photoacid generator



Peroxide  
Ester of Naphthoquinone diazido sulfonic acid  
Nitrobenzyl ester

$R_1, R_2 \neq R_3 \rightarrow$  each represent H atom, alkyl gp, alkenyl gp, cycloalkyl gp, aryl gp.

or gp. other than these groups in which the portion bonded directly to silicon or nitrogen is carbon, alkylsilyl gp, alkylamino gp, or an alkoxy gp.

## STAFF USE ONLY

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher: <u>Ed</u>	NA Sequence (#) _____	STN <u>\$200.00</u>	
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____	
Searcher Location: _____	Structure (#) <u>✓ (1)</u>	Questel/Orbit _____	
Date Searcher Picked Up: _____	Bibliographic <u>✓</u>	Dr. Link _____	
Date Completed: <u>8-7-03</u>	Litigation _____	Lexis/Nexis _____	
Searcher Prep & Review Time: <u>5</u>	Fulltext _____	Sequence Systems _____	
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____	
Online Time: <u>45</u>	Other _____	Other (specify) _____	

## SEARCH REQUEST FORM

Scientific and Technical Information Center

8-1-03

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 8-1-03  
 Art Unit: 1752 Phone Number 305-5504 Serial Number: 09/806,852  
 Mail Box and Bldg/Room Location: 9805 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*  
 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Photosensitive polysilazane composition & method of forming patterned polysilazane film  
 Inventors (please provide full names): Nagahara, Tatsuhiro; Matsuro, Hideki; Aoki, Tomoko; Yamada, Kazuhiro  
 Earliest Priority Filing Date: 6-18-01

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for a photosensitive composition comprising

- ① a polysilazane of the following formula and ② one of the following photoacid generator

- [ peroxide  
 nitrobenzyl ester  
 Naphthoquinone diazidosulfonate ester



$n \rightarrow$  arbitrary integer

$\text{R}^4 \neq \text{R}^5 \rightarrow$  each represent H atom, alkyl gp, alkenyl gp, cycloalkyl gp, aryl gp.

a gp. other than these groups in which the portion bonded directly to silicon or nitrogen is carbon, alkylsilyl gp, alkylamino gp or an alkoxy gp.

## STAFF USE ONLY

Searcher: Ed

Searcher Phone #: \_\_\_\_\_

Searcher Location: \_\_\_\_\_

Date Searcher Picked Up: \_\_\_\_\_

Date Completed: 8-7-03Searcher Prep & Review Time: 5

Clerical Prep Time: \_\_\_\_\_

Online Time: 50

## Type of Search

NA Sequence (#) \_\_\_\_\_

AA Sequence (#) \_\_\_\_\_

Structure (#) (1)Bibliographic (and)

Litigation \_\_\_\_\_

Fulltext \_\_\_\_\_

Patent Family \_\_\_\_\_

Other \_\_\_\_\_

## Vendors and cost where applicable

STN \$200.00

Dialog \_\_\_\_\_

Questel/Orbit \_\_\_\_\_

Link \_\_\_\_\_

Lexis/Nexis \_\_\_\_\_

Sequence Systems \_\_\_\_\_

WWW/Internet \_\_\_\_\_

Other (specify) \_\_\_\_\_

PTO-1590 (8-01)

$\rightarrow$  preferably ( $\text{R}^4$  - methyl or  $\text{R}^4$  - phenyl gp  
 $\text{R}^5$  - H atom or  $\text{R}^5$  - H atom  
 These preferred polysilazanes are obtained by using  $\text{CH}_3\text{SiCl}_3$  or  $\text{C}_6\text{H}_5\text{SiCl}_3$  for the starting material in ammonolysis during polysilazane synthesis

BEST AVAILABLE COPY

=> file reg

FILE 'REGISTRY' ENTERED AT 16:00:51 ON 07 AUG 2003  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2003 American Chemical Society (ACS)

=> display history full l1-

FILE 'REGISTRY' ENTERED AT 14:56:04 ON 07 AUG 2003

ACT LEE852/A

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L1 STR  
L2 SCR 2043  
L3 STR  
L4 137 SEA SSS FUL L1 AND L3 AND L2

-----  
ACT LEE852A/A

-----

L5 3 SEA (25155-25-3/BI OR 614-45-9/BI OR 77473-08-6/BI)

-----  
ACT LEE852B/A

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L6 ( 6)SEA (153340-09-1/BI OR 25155-25-3/BI OR 32169-90-7/BI OR

L7 2 SEA L6 AND PMS/CI

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ACT LEE852C/A

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L8 1 SEA 68510-93-0/BI

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FILE 'LREGISTRY' ENTERED AT 14:58:58 ON 07 AUG 2003

L9 STR L1

FILE 'REGISTRY' ENTERED AT 15:01:42 ON 07 AUG 2003

L10 0 SEA SUB=L4 SSS SAM L9

L11 58 SEA SUB=L4 SSS FUL L9

SAV L11 LEE852D/A

L12 14 SEA L11 AND 2/NC

FILE 'HCAPLUS' ENTERED AT 15:04:38 ON 07 AUG 2003

L13 16 SEA L12

L14 2731 SEA L5

L15 291 SEA L8

L16 0 SEA L13 AND (L14 OR L15)

FILE 'REGISTRY' ENTERED AT 15:06:01 ON 07 AUG 2003

E HYDROGEN PEROXIDE/CN

L17 1 SEA "HYDROGEN PEROXIDE"/CN

E NITROBENZYL ESTER/CN

FILE 'HCAPLUS' ENTERED AT 15:09:45 ON 07 AUG 2003

L18 289225 SEA L17 OR PEROXIDE# OR PEROXY? OR PERACID# OR H2O2  
L19 0 SEA L13 AND L18  
E SILSEQUISILAZANE

FILE 'LCA' ENTERED AT 15:11:39 ON 07 AUG 2003

L20 1 SEA ?SILSESQUIAZAN?

FILE 'REGISTRY' ENTERED AT 15:13:37 ON 07 AUG 2003

L21 14 POLYLINK L12  
L22 0 SEA L21 NOT L12

FILE 'HCAPLUS' ENTERED AT 15:14:58 ON 07 AUG 2003

L23 43 SEA ?SILSESQUIAZAN?  
L24 1 SEA L23 AND (L14 OR L15 OR L18)

FILE 'LCA' ENTERED AT 15:16:12 ON 07 AUG 2003

L25 32135 SEA (PRODUC? OR PROD# OR GENERAT? OR MANUF? OR MFR# OR  
CREAT? OR FORM## OR FORMING# OR FORMAT? OR MAKE# OR  
MADE# OR MAKING# OR FABRICAT? OR SYNTHESI? OR PREPAR? OR  
PREP#) /BI,AB

FILE 'HCAPLUS' ENTERED AT 15:18:58 ON 07 AUG 2003

L26 726572 SEA PAG OR PAGES OR P(W)A(W)G OR PHOTOACID? OR PHOTOGENERA  
? OR L25(2A)ACID? OR PHOTO(2A)(ACID? OR GENERA?)  
L27 86369 SEA ((PHOTO OR LIGHT OR PHOTOLY?) (2A) (RX# OR RXN# OR  
REACT? OR SENSITI? OR POLYM? OR CURE# OR CURING# OR  
CURAB? OR CROSSLINK? OR CROSS(W)LINK? OR CAT# OR  
CATALY?)) /BI,AB  
L28 95939 SEA ((ULTRAVIOLET? OR ULTRA(W)VIOLET? OR UV# OR SUV OR  
LUV OR RADIA? OR IRRADIA? OR EMANAT? OR EMIT? OR EMISS?  
OR LASER?) (2A) (RX# OR RXN# OR REACT? OR REACT? OR POLYM?  
OR CURE# OR CURING# OR CURAB? OR CAT# OR CATALY? OR  
CROSS(W)LINK? OR CROSSLINK?)) /BI,AB  
L29 154551 SEA (PHOTORX## OR PHOTOREACT? OR PHOTOSENS? OR PHOTOPOLYM  
? OR PHOTOCUR? OR PHOTOHARDEN? OR PHOTOCROSS? OR  
PHOTOCAT?) /BI,AB  
L30 0 SEA L13 AND L26  
L31 1 SEA L13 AND (L27 OR L28 OR L29)  
L32 3 SEA L23 AND L26  
L33 3 SEA L23 AND (L27 OR L28 OR L29)  
L34 6 SEA L24 OR L31 OR L32 OR L33  
L35 15 SEA L13 NOT L34

FILE 'REGISTRY' ENTERED AT 15:27:03 ON 07 AUG 2003

L36 6 SEA L4 AND H2O

FILE 'HCAPLUS' ENTERED AT 15:27:35 ON 07 AUG 2003

L37 4 SEA L36  
L38 2 SEA L37 AND (L14 OR L15 OR L18 OR L26 OR L27 OR L28 OR  
L29)

FILE 'REGISTRY' ENTERED AT 15:29:55 ON 07 AUG 2003

L39 6 POLYLINK L36  
L40 0 SEA L39 NOT L36

FILE 'HCAPLUS' ENTERED AT 15:31:03 ON 07 AUG 2003

L41 4 SEA L38 OR L37

FILE 'LREGISTRY' ENTERED AT 15:33:34 ON 07 AUG 2003

E POLYSILAZANE/PCT  
E A/PCT  
E POLYOTHER ONLY/PCT  
L42 316 SEA "POLYOTHER ONLY"/PCT  
L43 16 SEA L42 AND SI/ELS AND N/ELS  
L44 STR L1

FILE 'REGISTRY' ENTERED AT 15:38:21 ON 07 AUG 2003

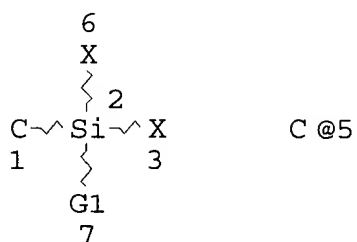
L45 2 SEA SUB=L4 SSS SAM L44  
L46 92 SEA SUB=L4 SSS FUL L44  
SAV L46 LEE852E/A  
L47 6 SEA L46 AND 2/NC  
L48 6 POLYLINK L47  
L49 0 SEA L48 NOT L47  
L50 3 POLYLINK L7  
L51 1 SEA L50 NOT L7

FILE 'HCAPLUS' ENTERED AT 15:42:20 ON 07 AUG 2003

L52 71 SEA L47 OR L7 OR L50  
L53 11 SEA L47  
L54 22 SEA L7  
L55 47 SEA L51  
L56 3 SEA (L53 OR L54) AND (L14 OR L15 OR L18 OR L26 OR L27 OR  
L28 OR L29)  
L57 1 SEA L55 AND (L14 OR L15 OR L18 OR L26 OR L27 OR L28 OR  
L29)  
L58 4 SEA L56 OR L57  
L59 3 SEA L53 AND P/DT  
L60 10 SEA L53 AND (1907-2001/PY OR 1907-2001/PRY)  
L61 3 SEA L59 AND L60  
L62 3 SEA L61 NOT L58  
L63 12 SEA L54 AND P/DT  
L64 21 SEA L54 AND (1907-2001/PY OR 1907-2001/PRY)  
L65 12 SEA L63 AND L64  
L66 10 SEA L65 NOT (L58 OR L62)  
L67 14 SEA L55 AND P/DT  
L68 14 SEA L67 AND (1907-2001/PY OR 1907-2001/PRY)  
L69 14 SEA L67 AND L68  
L70 10 SEA L69 NOT (L58 OR L62 OR L66)

FILE 'REGISTRY' ENTERED AT 16:00:51 ON 07 AUG 2003

=> d l11 que stat  
L1 STR



VAR G1=X/5

NODE ATTRIBUTES:

NSPEC IS RC AT 1  
NSPEC IS RC AT 5  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

L2 SCR 2043  
L3 STR

```

G1 1      @4      H2N— G2      Ak @10      Cb @12
      N          @7  8
      E3

```

VAR G1=4/7

VAR G2=10/12

NODE ATTRIBUTES:

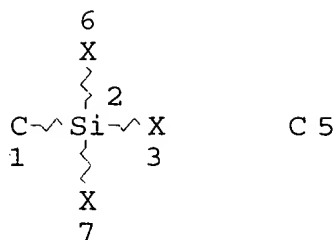
HCOUNT IS E3 AT 4  
CONNECT IS E1 RC AT 10  
CONNECT IS E1 RC AT 12  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

L4 137 SEA FILE=REGISTRY SSS FUL L1 AND L3 AND L2  
L9 STR



## NODE ATTRIBUTES:

```

NSPEC   IS RC      AT    1
NSPEC   IS RC      AT    5
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

```

## GRAPH ATTRIBUTES:

```

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS    6

```

## STEREO ATTRIBUTES: NONE

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L11          58 SEA FILE=REGISTRY SUB=L4 SSS FUL L9

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100.0% PROCESSED      83 ITERATIONS
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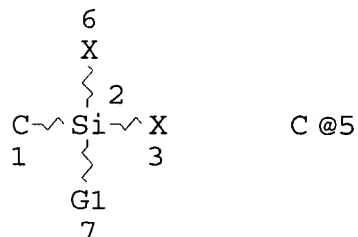
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58 ANSWERS

```

=> d l46 que stat
L1          STR

```



```

VAR G1=X/5

```

## NODE ATTRIBUTES:

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NSPEC   IS RC      AT    1
NSPEC   IS RC      AT    5
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

```

## GRAPH ATTRIBUTES:

```

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS    6

```



STEREO ATTRIBUTES: NONE  
 L2 SCR 2043  
 L3 STR

G1 1 @4  
 N H2N—G2 Ak @10 Cb @12  
 E3 @7 8

VAR G1=4/7

VAR G2=10/12

NODE ATTRIBUTES:

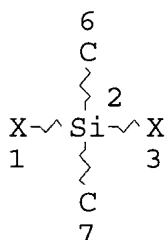
HCOUNT IS E3 AT 4  
 CONNECT IS E1 RC AT 10  
 CONNECT IS E1 RC AT 12  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

L4 137 SEA FILE=REGISTRY SSS FUL L1 AND L3 AND L2  
 L44 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 6  
 NSPEC IS RC AT 7  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 5

STEREO ATTRIBUTES: NONE

L46 92 SEA FILE=REGISTRY SUB=L4 SSS FUL L44

100.0% PROCESSED 109 ITERATIONS  
 SEARCH TIME: 00.00.01

92 ANSWERS

=> file hcaplus

FILE 'HCAPLUS' ENTERED AT 16:05:24 ON 07 AUG 2003

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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=> d l41 1-4 cbib abs hitstr hitind

L41 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN

2002:765906 Document No. 137:280300 Silicon-containing polymers and their manufacture and films with good transparency and low relative permittivity. Tashiro, Yuji (Clariant Japan K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2002293941 A2 20021009, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-99092/20010330.

AB The polymers, having Mn of 500-1,000,000, contain structural repeating units (SR1R2A)p and (SR3R4R7SR5R6)q [R1-R6 = (cyclo)alkyl, alkenyl, aryl, aralkyl, alkylamino, alkylsilyl, alkoxy; R7 = divalent group; A = NH, O; q/(p+q) = 0.01-0.99; (SiO)/(SiN + SiO) = 0.01-0.99]. The films are elec. insulators for semiconductor devices and plasma display panels. Thus, a reaction product of diaminodiphenyl ether with a mixt. of PhSiCl3, Ph2SiCl2, MeSiCl2, and 1,4-bis(dimethylchlorosilyl)benzene was successively reacted with water and NH3 to give a copolymer showing Mn 2100. The copolymer was applied on a glass plate and cured at 400.degree. to give a film showing light transmittance 97% , relative permittivity 2.75, and good heat resistance.

IT **464917-23-5P**, Ammonia-1,4-Bis(dimethylchlorosilyl)benzene-diaminodiphenyl ether-diphenyldichlorosilane-methyldichlorosilane-phenyltrichlorosilane hydrolytic copolymer **464917-24-6P**, Ammonia-1,4-Bis(dimethylchlorosilyl)benzene-diphenyldichlorosilane-methyldichlorosilane-p-phenylenediamine-phenyltrichlorosilane hydrolytic copolymer **464917-25-7P**

(manuf. of silicon-contg. polymers for dielec. films with good transparency and heat resistance)

RN 464917-23-5 HCAPLUS

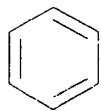
CN Benzenamine, ar,ar'-oxybis-, polymer with ammonia, dichlorodiphenylsilane, dichloromethylsilane, 1,4-phenylenebis[chlorodimethylsilane] and trichlorophenylsilane, hydrolytic (9CI) (CA INDEX NAME)

CM 1

CRN 27133-88-6

CMF C12 H12 N2 O

CCI IDS



D1-NH<sub>2</sub>

1/2 ( D1-O-D1 )

CM 2

CRN 7732-18-5

CMF H2 O

H<sub>2</sub>O

CM 3

CRN 7664-41-7

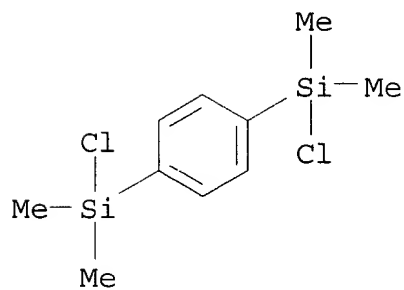
CMF H3 N

NH<sub>3</sub>

CM 4

CRN 1078-97-3

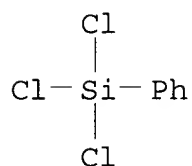
CMF C10 H16 Cl2 Si2



CM 5

CRN 98-13-5

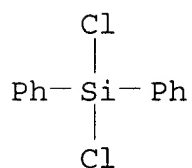
CMF C6 H5 Cl3 Si



CM 6

CRN 80-10-4

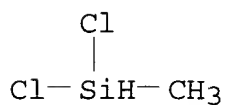
CMF Cl2 H10 Cl2 Si



CM 7

CRN 75-54-7

CMF C H4 Cl2 Si



RN 464917-24-6 HCAPLUS

CN 1,4-Benzenediamine, polymer with ammonia, dichlorodiphenylsilane, dichloromethylsilane, 1,4-phenylenebis[chlorodimethylsilane] and trichlorophenylsilane, hydrolytic (9CI) (CA INDEX NAME)

CM 1

CRN 7732-18-5

CMF H2 O

H<sub>2</sub>O

CM 2

CRN 7664-41-7

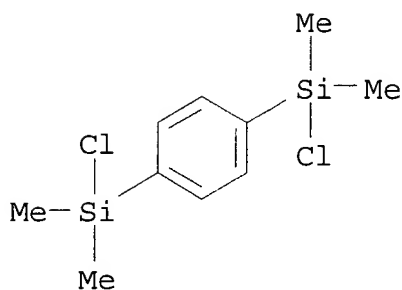
CMF H3 N

NH<sub>3</sub>

CM 3

CRN 1078-97-3

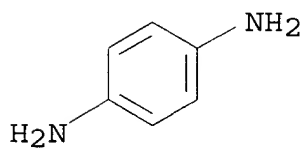
CMF C10 H16 Cl2 Si2



CM 4

CRN 106-50-3

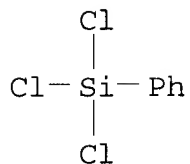
CMF C6 H8 N2



CM 5

CRN 98-13-5

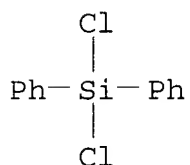
CMF C6 H5 Cl3 Si



CM 6

CRN 80-10-4

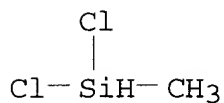
CMF C12 H10 Cl2 Si



CM 7

CRN 75-54-7

CMF C H4 Cl2 Si



RN 464917-25-7 HCAPLUS

CN Silane, 1,4-phenylenebis[chlorodimethyl-, polymer with ammonia,  
dichlorodiphenylsilane, dichloromethylsilane and  
trichlorophenylsilane, hydrolytic (9CI) (CA INDEX NAME)

CM 1

CRN 7732-18-5

CMF H2 O

H<sub>2</sub>O

CM 2

CRN 7664-41-7

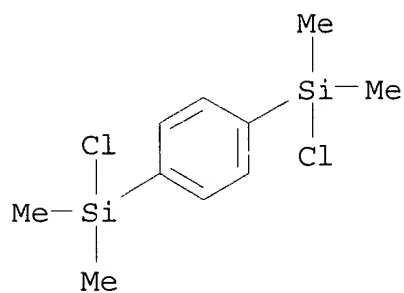
CMF H3 N

NH<sub>3</sub>

CM 3

CRN 1078-97-3

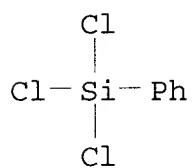
CMF C10 H16 Cl2 Si2



CM 4

CRN 98-13-5

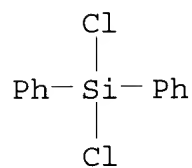
CMF C6 H5 Cl3 Si



CM 5

CRN 80-10-4

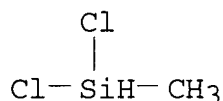
CMF C12 H10 Cl2 Si



CM 6

CRN 75-54-7

CMF C H4 Cl2 Si



IC ICM C08G077-54

ICS C08J005-18; C08L083-14

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 35, 74, 76

IT **464917-23-5P**, Ammonia-1,4-Bis(dimethylchlorosilyl)benzene-diaminodiphenyl ether-diphenyldichlorosilane-methyldichlorosilane-phenyltrichlorosilane hydrolytic copolymer **464917-24-6P**, Ammonia-1,4-Bis(dimethylchlorosilyl)benzene-diphenyldichlorosilane-methyldichlorosilane-p-phenylenediamine-phenyltrichlorosilane hydrolytic copolymer **464917-25-7P**

(manuf. of silicon-contg. polymers for dielec. films with good transparency and heat resistance)

L41 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN

2001:857572 Document No. 136:7793 Storage-stable

**photocatalytic** compositions. Nakabayashi, Akira; Ota, Kazuya (Asahi Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001329189 A2 20011127, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-153562 20000524.

AB Title comps. contain **photocatalyst** sols with no.-av.

diam. of .ltoreq.400 nm and silicones contg. .gtoreq.2 Si-bonded H groups. A compn. contg. 80-nm TKS 251 and MeSiCl3-Me2ClSiH hydrolytic copolymer showed no gelation at 30.degree. over 3 mo and was coated on a glass plate to form a film with pencil hardness HB and water-contact angle 84.degree. initially, which were changed to 5 H and 0.degree. after UV irradiation.

IT **375396-43-3DP**, trimethylsilyl-terminated

(Si-bonded H-contg. siloxane coatings contg.

**photocatalyst** sols with storage stability)

RN 375396-43-3 HCAPLUS

CN Silane, trichloromethyl-, polymer with chlorodimethylsilane and .alpha.-sulfo-.omega.-[1-[(nonylphenoxy)methyl]-2-(2-propenyloxy)ethoxy]poly(oxy-1,2-ethanediyl) ammonium salt, hydrolytic (9CI) (CA INDEX NAME)

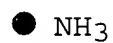
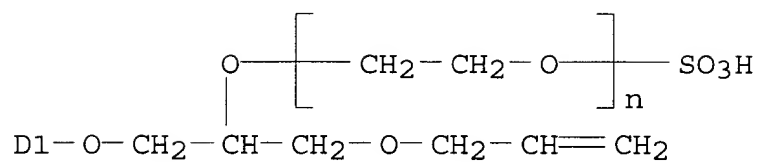
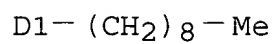
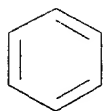
CM 1

CRN 113405-85-9

CMF (C2 H4 O)n C21 H34 O6 S . H3 N

CCI IDS, PMS





CM 2

CRN 7732-18-5

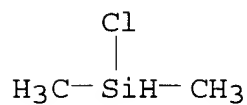
CMF H2 O

H<sub>2</sub>O

CM 3

CRN 1066-35-9

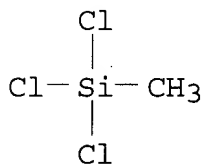
CMF C2 H7 Cl Si



CM 4

CRN 75-79-6

CMF C H3 Cl3 Si



- IC ICM C09D005-00  
ICS B01J035-02; B01J037-02; C08G077-12; C08G077-38; C08K003-22;  
C08K005-00; C08K009-06; C08L083-05; C08L083-06; C08L083-07;  
C08L083-08; C08L101-00; C09D183-04; C09D183-05
- CC 42-10 (Coatings, Inks, and Related Products)
- ST storage stability titania sol siloxane coating;  
**photocatalytic** siloxane coating titania sol
- IT Polysiloxanes, uses  
(Si-bonded H-contg. siloxane coatings contg.  
**photocatalyst** sols with storage stability)
- IT Coating materials  
(storage-stable; Si-bonded H-contg. siloxane coatings contg.  
**photocatalyst** sols with storage stability)
- IT 156894-09-6DP, Chlorodimethylsilane-trichloromethylsilane copolymer,  
hydrolytic, dimethylsilyl-terminated 375396-41-1DP,  
dimethylsilyl-terminated **375396-43-3DP**,  
trimethylsilyl-terminated 375396-44-4P  
(Si-bonded H-contg. siloxane coatings contg.  
**photocatalyst** sols with storage stability)
- IT 375843-33-7, TKS 251  
(titania organosol; Si-bonded H-contg. siloxane coatings contg.  
**photocatalyst** sols with storage stability)
- L41 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN  
2001:516109 Document No. 135:108687 Bilayered silicone resin-coated  
products with warm water and weather resistance. Furuya, Masahiro;  
Yoshikawa, Hiroshi; Iwasaki, Tomoyuki; Yamatani, Masaaki; Yamamoto,  
Akira (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2001191026 A2 20010717, 21 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2000-2873 20000111.
- AB Title products are prep'd. by substrates with bottom compns. contg.  
hydrolyzable silyl-contg. compds. and/or their hydrolyzates, then  
with top compns. contg. silicone resin emulsions prep'd. from 10-103  
parts radical polymerizable vinyl compds. and 100 parts  
silanol-contg. silicone resins with no.-av. mol. wt. (Mn) of  
.gtoreq.500 and contg. 30-100 mol% SiZ<sub>3</sub> units (Z = OH, hydrolyzable  
group, siloxane residue with at least one siloxane residue)  
including 30-80 mol% (based on total SiZ<sub>3</sub> units) RSi(OH)Z'<sub>2</sub> [R =  
(substituted) hydrocarbyl; Z' = siloxane residue]. A slate panel  
was coated with a soln. contg. 3-aminopropyltrimethoxysilane-3-  
glycidopropyltrimethoxysilane copolymer, dried at room temp. for 1  
h, coated with a compn. contg. white pigment paste and an emulsion  
contg. a resin (prep'd. from Bu acrylate- and Me methacrylate-contg.  
MeSi(OMe)<sub>3</sub> homopolymer soln. and 3-methacryloxypropyltrimethoxysilan  
e in the presence of a **peroxide**, Aqualon HS 10 and Aqualon

RN 20), and baked at 150.degree. for 5 min to form a panel with good adhesion to the coatings after 10 cycles of soaking in 60.degree. water for 2 h and drying for 2 h per cycle; 86% gloss retention was shown using an Al as substrate with the same coatings after 500 h under weatherometer.

IT 350008-54-7P

(emulsion topcoats; acrylic siloxane top compn.- and silicone bottom compn.-coated products with warm water and weather resistance)

RN 350008-54-7 HCAPLUS

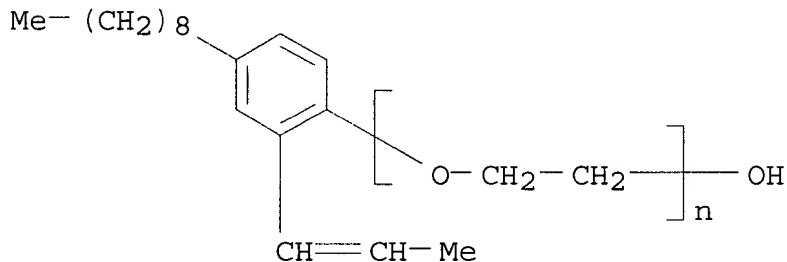
CN 2-Propenoic acid, 2-methyl-, 3-(dimethoxymethylsilyl)propyl ester, polymer with butyl 2-propenoate, methyl 2-methyl-2-propenoate, .alpha.-[4-nonyl-2-(1-propenyl)phenyl]-.omega.-hydroxypoly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-[4-nonyl-2-(1-propenyl)phenoxy]poly(oxy-1,2-ethanediyl) ammonium salt and trichloromethylsilane hydrolytic polymer with trichlorophenylsilane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 146847-27-0

CMF (C2 H4 O)<sub>n</sub> C18 H28 O

CCI PMS

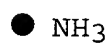
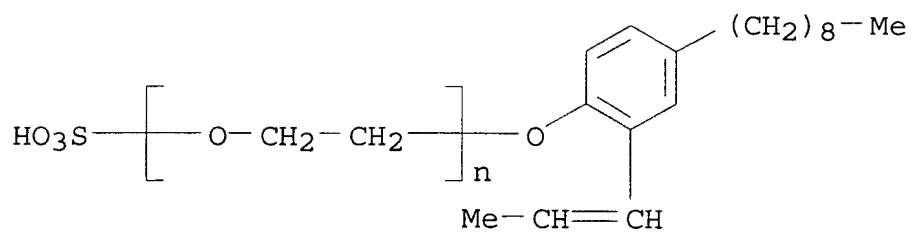


CM 2

CRN 140651-97-4

CMF (C2 H4 O)<sub>n</sub> C18 H28 O4 S . H3 N

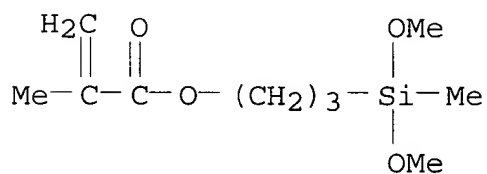
CCI PMS



CM 3

CRN 14513-34-9

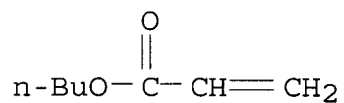
CMF C10 H20 O4 Si



CM 4

CRN 141-32-2

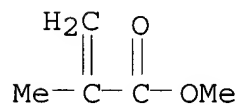
CMF C7 H12 O2



CM 5

CRN 80-62-6

CMF C5 H8 O2



CM 6

CRN 181050-37-3

CMF (C6 H5 Cl3 Si . C H3 Cl3 Si . H2 O)x

CCI PMS

CM 7

CRN 7732-18-5

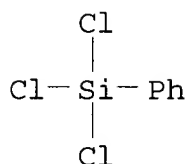
CMF H2 O

H<sub>2</sub>O

CM 8

CRN 98-13-5

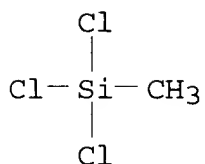
CMF C6 H5 Cl3 Si



CM 9

CRN 75-79-6

CMF C H3 Cl3 Si



IC ICM B05D007-24

ICS C09D005-00; C09D151-08; C09D183-04

CC 42-10 (Coatings, Inks, and Related Products)

IT 350008-52-5P 350008-53-6P **350008-54-7P**

(emulsion topcoats; acrylic siloxane top compn.- and silicone bottom compn.-coated products with warm water and weather resistance)

L41 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN  
1995:490140 Document No. 123:146867 Organohydrosiloxazanes and their  
manufacture. Tashiro, Juji (Tonen Corp, Japan). Jpn. Kokai Tokkyo  
Koho JP 07018080 A2 19950120 Heisei, 5 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1993-161431 19930630.

AB The title polymers, forming hard fire-resistant films when calcined,  
contain main repeating units  $\text{SiH}_2\text{NH}$ ,  $\text{SiRHNH}$ ,  $\text{SiH}_2\text{O}$ , and  $\text{SiRHO}$  (R =  
alkyl, alkenyl, cycloalkyl, aryl, alkylamino, alkylsilyl), have  
no.-av. mol. wt. (Mn) 100-100,000, and are manufd. by treating  
complexes of  $\text{H}_2\text{SiX}_2$ ,  $\text{RnSiH}_2\text{-nX}_2$  (X = halo; n = 1-2), and a Lewis  
base with  $\text{NH}_3$  and  $\text{H}_2\text{O}$ . Stirring 50.5 g  $\text{H}_2\text{SiCl}_2$  and 25.3 g  $\text{Ph}_2\text{SiCl}_2$   
in pyridine at -40.degree. and adding 27.54 g  $\text{NH}_3$  and 3.24 g  $\text{H}_2\text{O}$  at  
-40.degree. gave 33.0 g viscous liq. (Mn 900) which was applied on a  
carbon sheet and heated at 300.degree. under N to form a 30-.mu.m  
film with pencil hardness 5H and cross-cut adhesion 100/100.

IT 167092-61-7P  
(coatings; prepn. of heat-resistant hard)

RN 167092-61-7 HCAPLUS

CN Silane, dichlorodiphenyl-, polymer with ammonia and dichlorosilane,  
hydrolytic (9CI) (CA INDEX NAME)

CM 1

CRN 7732-18-5

CMF H2 O

H2O

CM 2

CRN 7664-41-7

CMF H3 N

NH3

CM 3

CRN 4109-96-0

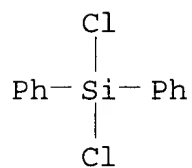
CMF Cl2 H2 Si

Cl-SiH<sub>2</sub>-Cl

CM 4

CRN 80-10-4

CMF C12 H10 Cl2 Si



IC ICM C08G077-54

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 35, 37

IT 167092-61-7P 167092-62-8P

(coatings; prepn. of heat-resistant hard)

=&gt; d 158 1-4 cbib abs hitstr hitind

L58 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN

2000:241669 Document No. 132:286325 **Photosensitive**

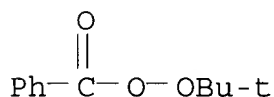
polysilazane composition and method of forming patterned layer using same. Nagahara, Tatsuro; Matsuo, Hideki; Aoki, Tomoko; Yamada, Kazuhiro (Tonen Corporation, Japan). PCT Int. Appl. WO 2000020927 A1 20000413, 45 pp. DESIGNATED STATES: W: KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP5498 19991005. PRIORITY: JP 1998-282697 19981005.

AB The **photosensitive** polysilazane compn. has a polysilazane and a **light-sensitive acid-generating** agent. The compn. provides the patterned pos.-working polysilazane layer directly used as a photoresist.

IT 614-45-9, tert-Butylperoxybenzoate 25155-25-3, .alpha.,.alpha.'-Bis(tert-butylperoxy)diisopropylbenzene 32169-90-7, Poly[imino(dimethylsilylene)] 68510-93-0 77473-08-6, 3,3',4,4'-Tetra(tert-butylperoxycarbonyl)benzophenone 153340-09-1, Poly[imino(diphenylsilylene)] (photosensitive polysilazane compn.)

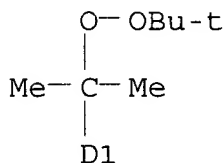
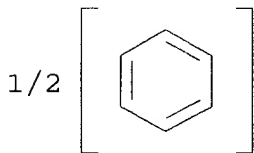
RN 614-45-9 HCAPLUS

CN Benzenecarboxylic acid, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

*applicants*

RN 25155-25-3 HCAPLUS

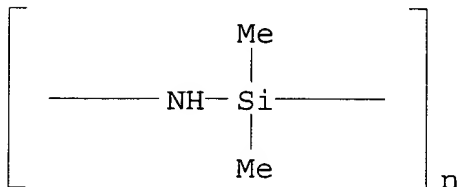
CN Peroxide, [1,3(or 1,4)-phenylenebis(1-methylethylidene)]bis[(1,1-dimethylethyl) (9CI) (CA INDEX NAME)





RN 32169-90-7 HCAPLUS

CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



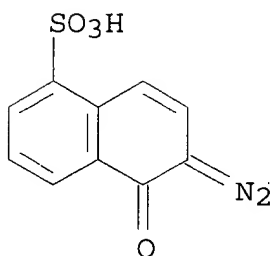
RN 68510-93-0 HCAPLUS

CN 1-Naphthalenesulfonic acid, 6-diazo-5,6-dihydro-5-oxo-, ester with phenyl (2,3,4-trihydroxyphenyl)methanone (9CI) (CA INDEX NAME)

CM 1

CRN 20546-03-6

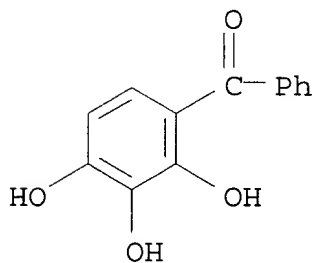
CMF C10 H6 N2 O4 S



CM 2

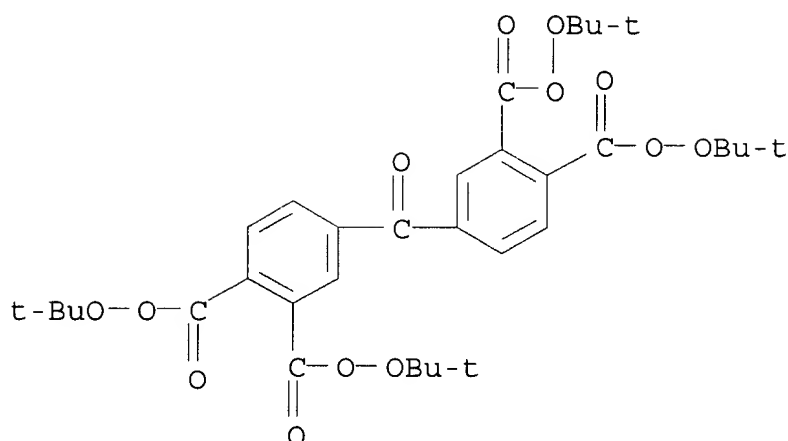
CRN 1143-72-2

CMF C13 H10 O4

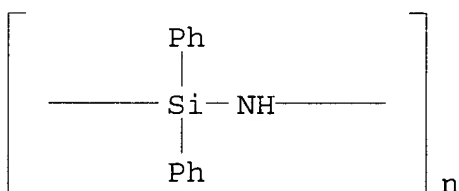


RN 77473-08-6 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, 4,4'-carbonylbis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



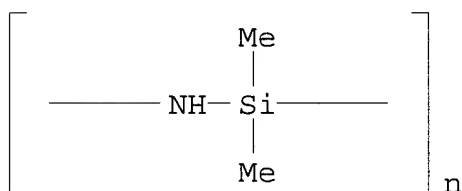
RN 153340-09-1 HCAPLUS  
 CN Poly[imino(diphenylsilylene)] (9CI) (CA INDEX NAME)



IC ICM G03F007-075  
 ICS G03F007-004; H01L021-027; C08L083-16  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST **photosensitive** polysilazane compn pattern forming method  
 photoresist  
 IT Photoresists  
 (photosensitive polysilazane compn. and method of forming patterned polysilazane film)  
 IT 614-45-9, tert-Butylperoxybenzoate 25155-25-3, .alpha., .alpha.'-Bis(tert-butylperoxy)diisopropylbenzene 32169-90-7, Poly[imino(dimethylsilylene)] 68510-93-0 77473-08-6, 3,3',4,4'-Tetra(tert-butylperoxycarbonyl)benzophenone 153340-09-1, Poly[imino(diphenylsilylene)] (photosensitive polysilazane compn.)  
 L58 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN  
 1988:213993 Document No. 108:213993 Positive-working **photosensitive** compositions for lithographic plates. Urano, Toshoshi; Tomiyasu, Hiroshi; Maeda, Yoshihiro; Nakai, Hideyuki; Goto, Sei; Sasa, Nobumasa (Mitsubishi Chemical Industries Co., Ltd.,

Japan; Konica Co.). Jpn. Kokai Tokkyo Koho JP 62222246 A2 19870930 Showa, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1986-16687 19860130.

- AB The title compns. contain agents that **generate acids** on irradiation with light and compds. or polymers containing Si-N bonds cleaved with the acids. The compns. do not contain quinoxaline compds. and provide high sensitivity and clean, non-reddish images. Thus, a cleaned, etched, anodized, and sealed Al plate was coated with a compn. containing a m,p-cresol-HCHO-phenol novolak resin 6.0, 1,1,1,3,3,3-hexamethylsilazane 0.66, 2-trichloromethyl-5-[.beta.-(2'-benzofuryl)vinyl]-1,3,4-oxadiazole 0.66 g, and solvents to form a 2.0 g/m<sup>2</sup> layer. Optimum exposure was 445 mJ. No stain was observed in its processing, and excellent reproduction of half-tone negative images was shown.
- IT **32169-90-7**  
(presensitized lithog. plates containing **acid-generating** photolabile compd. and)
- RN 32169-90-7 HCAPLUS
- CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



- IC ICM G03C001-72  
ICS G03C001-72; G03F007-02
- CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST lithog plate **photosensitive** silicon containing; silicon nitrogen compound lithog plate
- IT Phenolic resins, uses and miscellaneous  
(**photosensitive** silicon-containing plates containing, for lithog. plate preparation.)
- IT Lithographic plates  
(presensitized, **acid-generating** agents and nitrogen-containing silicon compounds for)
- IT 35464-74-5, m-Cresol-p-cresol-formaldehyde-phenol copolymer  
(**photosensitive** silicon-containing plates containing, for lithog. plate preparation.)
- IT 996-50-9 999-97-3 2587-46-4 30175-32-7 **32169-90-7**  
(presensitized lithog. plates containing **acid-generating** photolabile compd. and)

L58 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN  
1986:119836 Document No. 104:119836 A comparison of the electron beam sensitivities and relative oxygen plasma etch rates of various organosilicon polymers. Babich, E.; Paraszczak, J.; Hatzakis, M.;

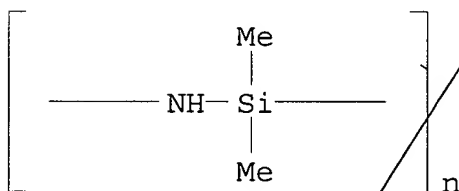
Shaw, J.; Grenon, B. J. (T. J. Watson Res. Cent., IBM, Yorktown Heights, NY, 10598, USA). Microelectronic Engineering, 3(1-4), 279-91 (English) 1985. CODEN: MIENEF. ISSN: 0167-9317.

AB A study of the electron beam sensitivities and O plasma etch rates of a variety of organosilicon polymers is discussed. The influence of pendant org. groups and heteroatoms in the main polymer chain on the plasma etch rates and electron beam sensitivities is also addressed.

IT 32169-90-7  
(electron beam sensitivity and relative oxygen plasma etch rate of)

RN 32169-90-7 HCAPLUS

CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 36

ST electron sensitivity organosilicon polymer; etching electron irradiated organosilicon polymer

IT Plasma  
(of organosilicon electron-irradiated polymers, in oxygen discharge)

IT 25036-32-2 26710-23-6 26935-16-0 29716-63-0 32169-90-7

76188-55-1 100845-04-3

(electron beam sensitivity and relative oxygen plasma etch rate of)

L58 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN

1975:458487 Document No. 83:58487 Nitriles from acids and organosilylamines. Bakassian, Georges; Lefort, Marcel (Rhone-Poulenc S. A., Fr.). U.S. US 3884957/19750520, 4 pp. (English). CODEN: USXXAM. APPLICATION: US 1974-444680 19740221.

AB Nitriles, e.g., MeCN, PhCH<sub>2</sub>CN, p-, o-HOC<sub>6</sub>H<sub>4</sub>CN, p-C<sub>6</sub>H<sub>4</sub>(CN)<sub>2</sub> and 4-cyanopyridine, were prepd. from the corresponding carboxylic acids in a single stage and in high yield by heating the acid with a silylamine, e.g., polydimethylcyclasilazane or HN(SiMe<sub>3</sub>)<sub>2</sub>, in the presence of ZnCl<sub>2</sub> or AlCl<sub>3</sub>.

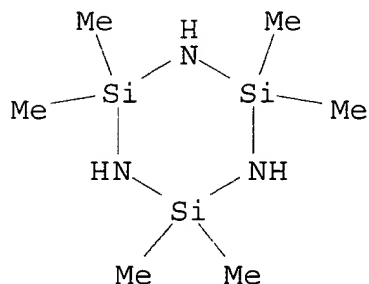
IT 27495-71-2  
(reaction of, with acids, nitriles from)

RN 27495-71-2 HCAPLUS

CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1009-93-4  
CMF C6 H21 N3 Si3



IC C07C  
NCL 260465000B  
CC 25-20 (Noncondensed Aromatic Compounds)  
Section cross-reference(s): 23, 27, 29  
IT Nitriles, **preparation**  
(from carboxylic **acids** by reaction with silylamines)  
IT 75-05-8P, **preparation**  
(from acetic **acid** by reaction with  
polydimethylcyclotri-silazane)  
IT **27495-71-2**  
(reaction of, with acids, nitriles from)

=> d l62 1-3 cbib abs hitstr hitind

L62 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2003 ACS on STN  
1994:515981 Document No. 121:115981 Manufacture of boron-containing  
silazanes, the silazanes obtained, and manufacture of silicon-,  
boron-, carbon-, and nitrogen-, and silicon-, boron-, and  
nitrogen-containing ceramics, and the ceramics obtained. Riedel,  
Ralf; Kienzle, Andreas; Petzow, Guenter; Brueck, Martin; Vaahs, Tilo  
(Hoechst A.-G., Germany). Ger. Offen. DE 4320783 A1  
**19940105**, 6 pp. (German). CODEN: GWXXBX. APPLICATION: DE  
1993-4320783 19930623. PRIORITY: DE 1992-4221654 19920702.  
AB The B-contg. silazanes are manufd. by reacting .gtoreq.1  
tris(silylboranes) having general formula B(C<sub>2</sub>H<sub>4</sub>SiCl<sub>2</sub>X)<sub>3</sub> [C<sub>2</sub>H<sub>4</sub> may  
be CH<sub>2</sub>CH<sub>2</sub> or CH(Me); X = Cl or Cl-4-aliph. moiety] with NH<sub>3</sub>. The  
B-contg. silazanes have general formula -[Si(NH-)(C<sub>2</sub>H<sub>4</sub>B<)NH-]a-[-  
Si(R)(C<sub>2</sub>H<sub>4</sub>B<)NH-]b- (C<sub>2</sub>H<sub>4</sub> as above; R = Cl-4-aliph. moiety; a + b =  
1). The Si-, B-, C-, and N-contg. ceramics are manufd. by  
pyrolyzing the B-contg. silazanes in N or Ar at 500-2000.degree.,  
and the Si-, B-, and N-contg. ceramics are manufd. by pyrolyzing the  
B-contg. siloxanes in NH<sub>3</sub>-contg. atm. at 500-2000.degree..  
Dichloromethylvinylsilane was reacted in PhMe with  
dimethylsulfideborane to give tris[(dichloromethylsilyl)ethyl]borane  
, which was reacted in THF with NH<sub>3</sub> to give silazanes. The

silazanes were spun into fibers, and the fibers pyrolyzed in Ar at 1100.degree. to give ceramic fibers contg. C 28.6, N 15.5, B 6.0, Si 45.6, and O 1.6 wt.%.

IT **156938-37-3P**

(manuf. of, for boron-contg. silazanes for silicon- and boron- and carbon- and nitrogen-contg. ceramics manuf.)

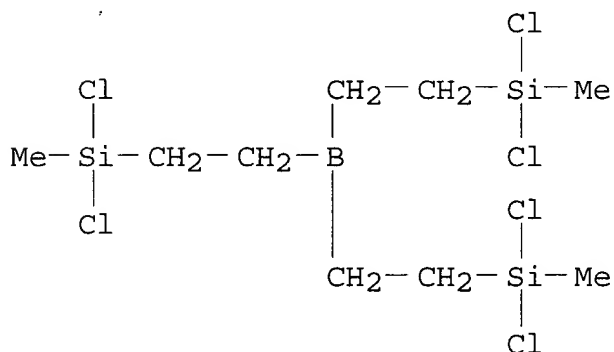
RN 156938-37-3 HCAPLUS

CN Borane, tris[2-(dichloromethylsilyl)ethyl]-, polymer with ammonia (9CI) (CA INDEX NAME)

CM 1

CRN 17932-83-1

CMF C9 H21 B Cl6 Si3



CM 2

CRN 7664-41-7

CMF H3 N

NH<sub>3</sub>

IC ICM C08G077-62

ICS C04B035-58

ICA D01F009-10; B32B018-00; B32B015-04; B32B015-18; D01F006-76; D01F006-78

CC 57-2 (Ceramics)

IT **156938-37-3P**

(manuf. of, for boron-contg. silazanes for silicon- and boron- and carbon- and nitrogen-contg. ceramics manuf.)

L62 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2003 ACS on STN

1991:657481 Document No. 115:257481 Preparation of chlorine-terminated silazanes. Vaahs, Tilo; Kleiner, Hanss Jerg (Hoechst A.-G., Germany). Ger. Offen. DE 4002384 A1 **19910801**, 5 pp.

(German). CODEN: GWXXBX. APPLICATION: DE 1990-4002384 19900127.  
 AB .alpha.,.omega.-Dichlorosilazanes are prepd. by reacting  
 oligosilazanes  $[\text{SiH}(\text{R})\text{NH}]_n$  ( $n = 3-12$ ) with silanes  $\text{R}_1\text{SiHCl}_2$ ,  
 $\text{R}_2\text{R}_3\text{SiCl}_2$ ,  $\text{R}_4\text{SiCl}_3$ ,  $\text{Cl}_3\text{SiCH}_2\text{CH}_2\text{Si}(\text{R}_6)\text{Cl}_2$ , or  $\text{CH}_2[\text{Si}(\text{R}_5)\text{Cl}_2]_2$  [ $\text{R} =$   
 alk(en)yl;  $\text{R}_1-6 = \text{H}$ , alk(en)yl] at between  $-20^\circ$  and  
 $+50^\circ$ .  $[\text{SiH}(\text{Me})\text{NH}]_{3-12}$  (prepd. from  $\text{MeSiHCl}_2$  and  $\text{NH}_3$  in THF  
 in 78% yield) was stirred (100 g) at  $-5^\circ$  while 48.9 g  
 $\text{MeSiHCl}_2$  was added over 1 h to give  $\text{Cl}[\text{SiH}(\text{Me})\text{NH}]_{1-4}\text{Si}(\text{Me})\text{HCl}$ .  
 IT **137147-47-8DP**, chlorine-terminated  
 (oligomeric, manuf. of)  
 RN 137147-47-8 HCAPLUS  
 CN Silane, dichlorodimethyl-, polymer with ammonia (9CI) (CA INDEX  
 NAME)

CM 1

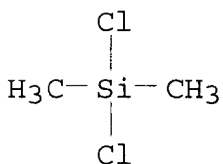
CRN 7664-41-7

CMF H3 N

NH<sub>3</sub>

CM 2

CRN 75-78-5

CMF C2 H6 Cl<sub>2</sub> Si

IC ICM C07F007-12

ICA C08G077-62; C04B035-58

CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 57

IT 75-54-7DP, Dichloromethylsilane, reaction products with silazanes  
 124-70-9DP, Dichloromethylvinylsilane, reaction products with  
 silazanes 2295-22-9DP, alkyl derivs., reaction products with  
 silazanes 18081-42-0DP, alkyl derivs., reaction products with  
 silazanes **137147-47-8DP**, chlorine-terminated  
 (oligomeric, manuf. of)

L62 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2003 ACS on STN

1967:105999 Document No. 66:105999 Infusible silazane polymer  
 coatings. Burks, Robert E., Jr.; Lacey, Robert E.; Christy, Charles  
 L., Jr.; Christy, Charles L., Jr. (Southern Research Institute).

U.S. US 3311571 **19670328**, 3 pp. (English). CODEN:

USXXAM. APPLICATION: US 19650830.

AB In an example, a silazane polymer (I) is prepd. as follows: 308 ml.  $\text{Ph}_2\text{SiCl}_2$  (II) in 3 l.  $\text{C}_6\text{H}_6$  was stirred under dry  $\text{NH}_3$  for 4 hrs., refluxed for 4 hrs., cooled, filtered from  $\text{NH}_4\text{Cl}$ , and distd. until the pot temp. reached 95.degree.. The liquid residue was filtered from cryst. hexaphenylcyclotrisilazane (165.6 g.). The filtrate was evapd. to give 55.2 g. I that was coated on an Al panel and cured at 500.degree. to give an infusible, solvent-resistant coating. I contg. 10 wt. % ethylenediaminesilazane gave a flexible coating when cured. Use of  $\text{Ph}_2\text{Si}(\text{NHMe})_2$  gave similar results, and the product yields were increased by carrying out the polymns. in the presence of  $\text{Et}_3\text{N}$ .

IT **31496-40-9P**

(manuf. of, in presence of diethylamine, and coating compns. therefrom)

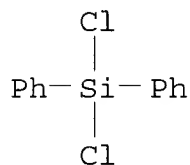
RN 31496-40-9 HCAPLUS

CN Silane, dichlorodiphenyl-, monoammoniate, polymers (8CI) (CA INDEX NAME)

CM 1

CRN 46374-98-5

CMF C12 H10 Cl2 Si . H3 N



$\text{NH}_3$

NCL 260002000

CC 42 (Coatings, Inks, and Related Products)

IT **31496-40-9P**

(manuf. of, in presence of diethylamine, and coating compns. therefrom)

=> d l66 1-10 cbib abs hitstr hitind

L66 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN

2000:881174. Document No. 134:61521 Compositions and methods for delivery of drugs and nucleic acids using pH sensitive molecules.

Wolff, Jon A. (Mirus Corporation, USA). PCT Int. Appl. WO

2000075164 A1 **20001214**, 114 pp. DESIGNATED STATES: W:



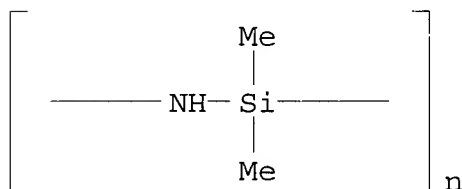
JP; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US15651 20000607. PRIORITY: US 1999-PV137859 19990607; US 1999-PV167836 19991129; US 1999-PV172809 19991221.

AB A system relating to the delivery of desired compds. (e.g., drugs and nucleic acids) into cells using pH-sensitive delivery systems is presented. The system provides compns. and methods for the delivery and release of a compd. to a cell. Transfection of Hela cells with histone H1 and the membrane active peptide melittin, dimethylmaleic-modified melittin or succinic anhydride-modified melittin was carried out. The 2,3-dimethylmaleic modification of melittin allowed the peptide to complex with the cationic protein histone H1 and then cleave to release and reactivate in the lowered pH encountered by the complex in the cellular endosomal compartment. This caused a significant increase in luciferase expression over either unmodified melittin peptide or melittin peptide modified with succinic anhydride which allows complexing with histone H1 but does not cleave in lowered pH.

IT **32169-90-7P**, Poly[imino(dimethylsilylene)]  
(pH-sensitive polymer delivery systems for drugs and nucleic acids)

RN 32169-90-7 HCAPLUS

CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



IC ICM C07H021-04

ICS C12Q001-68; A61K048-00

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 1, 3

IT 487-66-1DP, reaction products with peptides and polycations  
24979-82-6P 24991-23-9P 25104-18-1DP, Polylysine, reaction with  
2,3-dimethylmaleic anhydride and peptides 25104-18-1DP,  
Polylysine, reaction with 3-aminopropyltrimethoxysilane  
25513-46-6P, Polyglutamic acid 29056-54-0DP, Poly(DL-serine),  
reaction products with silane derivs. 30425-16-2P  
**32169-90-7P**, Poly[imino(dimethylsilylene)] 37231-28-0DP,  
Melittin, conjugates with polymers 107408-09-3DP, reaction  
products with 3-aminopropyltrimethoxysilane 113669-21-9P  
289888-17-1P, MC 151 289888-18-2P 313048-70-3P, MC 213  
313049-16-0P, MC 216 313049-22-8P, MC 211 313049-25-1P, MC 225  
313049-27-3P, MC 373 313049-28-4P 313049-29-5DP, MC 301, reduced  
313049-29-5P 313049-33-1P, MC 300 313049-34-2P 313049-35-3P  
313049-45-5P, MC 217 313049-59-1P 313049-70-6P 313049-81-9P  
313049-92-2P 313050-03-2P 313050-16-7P 313050-28-1P

313050-48-5P 313050-58-7P 313050-60-1P 313050-61-2P  
 313050-62-3P 313050-63-4P 313050-64-5P 313050-66-7P  
 313050-67-8P 313050-68-9P, MC 352 313050-75-8P 313050-83-8P,  
 MC 228 313050-85-0DP, reduced 313050-85-0P, MC 208  
 313050-86-1P, MC 300 313050-87-2P, MC 218 313050-88-3P, MC 226  
 313050-90-7P, MC 227 313050-91-8P, MC 140 313050-93-0P, MC 321  
 313050-95-2P, MC 322 313050-96-3P, MC 229 313050-98-5P, MC 323  
 313051-09-1P, MC 325 313051-18-2P, MC 326 313051-28-4P, MC 330  
 313051-29-5P, MC 331 313051-30-8P, MC 312 313051-31-9P, MC 129  
 313051-32-0P, MC 340 313051-33-1P, MC 347 313051-34-2P, MC 339  
 313051-35-3P, MC 346 313051-36-4P, MC 352 313051-37-5P, MC 357  
 313056-34-7P 313056-41-6P 313058-14-9DP, KL 3, conjugates with  
 polymers 313058-18-3DP, reaction with 2,3-dimethylmaleic anhydride  
 and pept 313058-19-4P, MC 324 313271-83-9P  
 (pH-sensitive polymer delivery systems for drugs and nucleic  
 acids)

L66 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN

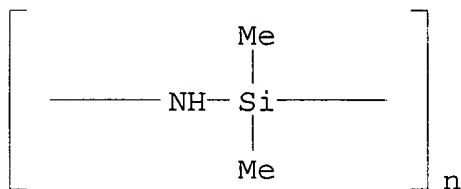
1997:5817 Document No. 126:62667 Solid electrolyte fuel cell stacks.  
 Ito, Naoki; Nakada, Keiichi; Yoshida, Toshihiko (Tonen Corp, Japan;  
 Petroleum Energy Center Found). Jpn. Kokai Tokkyo Koho JP 08255626  
 A2 19961001 Heisei, 8 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1995-59357 19950317.

AB The fuel cell stacks have unit cells contg. a solid electrolyte held  
 between an anode and a cathode, pipes connected to the electrodes  
 for supplying reaction gases to the electrodes and venting off gas  
 from the electrodes, and a heat exchanging material connecting the  
 off gas pipes and the oxidant gas supplying pipe for heating the  
 oxidant gas; where the pipes and the heat exchanging material have a  
 substrate composed of a heat resistant metal contg. .gtoreq.5% Cr,  
 or a cermet contg. the metal and a ceramic, and are coated with a  
 ceramic layer on the side facing the oxidant.

IT 32169-90-7, Poly[imino(dimethylsilylene)]  
 (silica coated Inconel 600 oxidant gas pipe and heat exchange  
 materials for solid electrolyte fuel cells)

RN 32169-90-7 HCAPLUS

CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M008-24

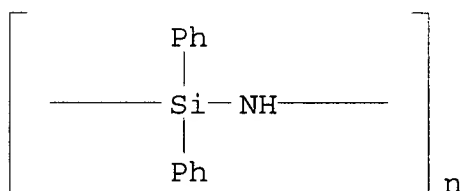
ICS H01M008-04; H01M008-10

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 32169-90-7, Poly[imino(dimethylsilylene)]  
 (silica coated Inconel 600 oxidant gas pipe and heat exchange

materials for solid electrolyte fuel cells)

L66 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
 1995:846884 Document No. 124:13901 Manufacture of high-density titanium carbide ceramics with preceramic polymer binders. Zank, Gregg A. (Dow Corning Corp., USA). U.S. US 5447893 A 19950905, 7 pp. (English). CODEN: USXXAM. APPLICATION: US 1994-283339 19940801.  
 AB The method entails mixing titanium carbide powder with a preceramic organosilicon polymer. The mixt. is then molded and sintered under pressure or by a pressureless process.  
 IT 153340-09-1, Poly[imino(diphenylsilylene)]  
 (in manuf. of high-d. titanium carbide ceramics with preceramic polymer binders)  
 RN 153340-09-1 HCAPLUS  
 CN Poly[imino(diphenylsilylene)] (9CI) (CA INDEX NAME)

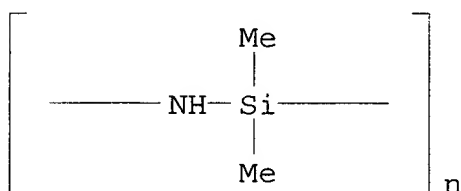


IC ICM C04B035-56  
 ICS C04B035-571  
 NCL 501087000  
 CC 57-2 (Ceramics)  
 IT 28323-46-8, Methyl vinyl siloxane 104133-11-1, Methylsilanetriol homopolymer 153315-80-1, Methylsilanetriol homopolymer, ladder stru 153340-09-1, Poly[imino(diphenylsilylene)] 157141-20-3, Methylvinylsilanediol homopolymer 162124-80-3, Poly[imino(ethenylmethylsilylene)] 171551-65-8 171551-66-9 171551-67-0  
 (in manuf. of high-d. titanium carbide ceramics with preceramic polymer binders)

L66 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
 1994:540035 Document No. 121:140035 Silicon carbide-base inorganic fiber-reinforced ceramic composites. Niihara, Koichi; Nakahira, Atsushi; Yamamura, Taketami; Sato, Mitsuhiko; Tamura, Makoto (Ube Industries, Japan). Jpn. Kokai Tokkyo Koho JP 06092745 A2 19940405 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-110638 19920319.  
 AB The title composites contain SiC-base inorg. fibers as reinforcing materials, and matrixes of oxide-base materials contg. carbide and/or nitride particles. The composites have high strength and fracture toughness. Thus, SiC-base inorg. fibers prep'd. by firing of polytitanocarbosilane (prep'd. from dimethyldichlorosilane) were treated with SiC particle-reinforced alumina composite powders to

give a composite having bending strength 1.75 GPa and 1.68 GPa, at room temp. and 1,300.degree., resp., and fracture toughness 17 MPa-m<sup>1/2</sup>.

IT **32169-90-7P**, Poly[imino(dimethylsilylene)]  
 (prepn. and firing of, in manuf. of silicon carbide-base inorg.  
 fibers-reinforced oxide-base ceramic composites)  
 RN 32169-90-7 HCAPLUS  
 CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



IC ICM C04B035-80

ICS D01F009-10

CC 57-2 (Ceramics)

Section cross-reference(s): 35

IT 27495-71-2P, Poly(hexamethylcyclotrisilazane) **32169-90-7P**,  
 Poly[imino(dimethylsilylene)]  
 (prepn. and firing of, in manuf. of silicon carbide-base inorg.  
 fibers-reinforced oxide-base ceramic composites)

L66 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN

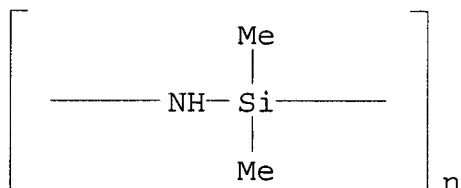
1994:540034 Document No. 121:140034 Silicon carbide-based inorganic  
 fiber-reinforced ceramics. Niihara, Koichi; Nakahira, Atsushi;  
 Yamamura, Taketami; Sato, Mitsuhiko; Tamura, Makoto (Ube Industries,  
 Japan). Jpn. Kokai Tokkyo Koho JP 06087657 A2 **19940329**  
 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 1992-110639 19920319.

AB The composites comprise SiC-based inorg. fibers as reinforcing  
 material, and matrixes of carbide- or nitride-based materials contg.  
 carbide- and/or nitride nanocomposite particles. The composites  
 have high strength and fracture toughness from ambient temp. to high  
 temp. Amorphous powder contg. Si, C, N, and O, prepd. from  
 hexamethyldisilazane was mixed with Y<sub>2</sub>O<sub>3</sub> and Al<sub>2</sub>O<sub>3</sub> and SiC-based  
 inorg. fibers prepd. by firing polytitanocarbosilane fibers, and  
 hot-pressed to give a composites contg. SiC particles and having  
 bending strength 1.43 GPa and 1.30 GPa, at the room temp. and  
 1,300.degree., resp., and fracture toughness 19 MPa-m<sup>0.5</sup>.

IT **32169-90-7P**, Poly[imino(dimethylsilylene)]  
 (manuf. and firing of, in silicon carbide-based inorg.  
 fiber-reinforced carbide- and nitride-based ceramics manuf.)

RN 32169-90-7 HCAPLUS

CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



IC ICM C04B035-58

ICS C04B035-80

CC 57-2 (Ceramics)

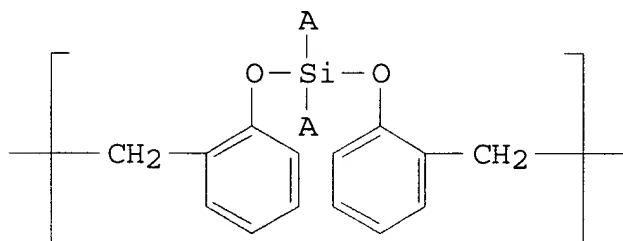
Section cross-reference(s): 35

IT **32169-90-7P**, Poly[imino(dimethylsilylene)](manuf. and firing of, in silicon carbide-based inorg.  
fiber-reinforced carbide- and nitride-based ceramics manuf.)

L66 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN

1994:178170 Document No. 120:178170 Spin on oxygen reactive ion etch  
barrier. Agostino, Peter A.; Giri, Ajay P.; Hiraoka, Hiroyuki;  
Willson, Carlton G.; Dawson, Daniel J. (International Business  
Machines Corp., USA). U.S. US 5270151 A **19931214**, 7 pp.  
(English). CODEN: USXXAM. APPLICATION: US 1992-852865 19920317.

GI

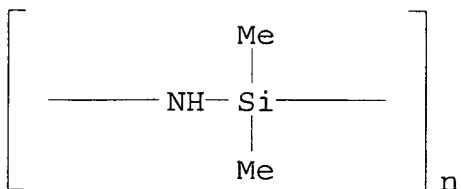


I

AB Reaction products I [A = Me or Ph] of organosilane compds. or  
polydiphenylsilazane compds. and a novolak resin having phenolic  
groups can be used as O RIE barrier materials in semiconductor  
etching processes. These materials have low O etching rates and can  
be spun on to form crack-free thick layers.IT **32169-90-7D**, Poly[imino(dimethylsilylene)], reaction product  
with Alnovol PN430 **153340-09-1D**,  
Poly[imino(diphenylsilylene)], reaction product with Alnovol PN430  
(RIE barrier from, in prodn. of semiconductor devices)

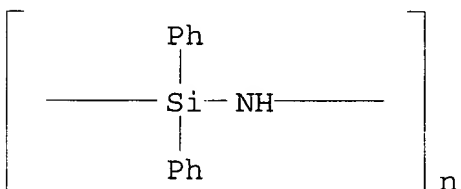
RN 32169-90-7 HCAPLUS

CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RN 153340-09-1 HCAPLUS

CN Poly[imino(diphenylsilylene)] (9CI) (CA INDEX NAME)



IC ICM G03F007-26

NCL 430313000

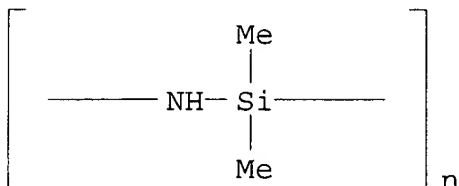
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76IT 75-78-5D, reaction product with Alnovol PN430 80-10-4D, reaction product with Alnovol PN430 149-74-6D, Methylphenyldichlorosilane, reaction product with Alnovol PN430 8003-35-4D, Alnovol PN430, reaction product with silanes and silazanes **32169-90-7D**, Poly[imino(dimethylsilylene)], reaction product with Alnovol PN430 110933-74-9D, Poly[imino(methylphenylsilylene)], reaction product with Alnovol PN430 **153340-09-1D**, Poly[imino(diphenylsilylene)], reaction product with Alnovol PN430 (RIE barrier from, in prodn. of semiconductor devices)

L66 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN

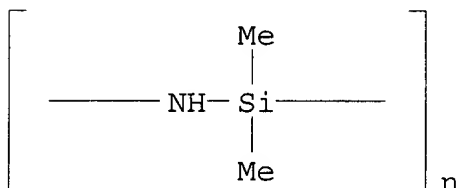
1993:496501 Document No. 119:96501 Manufacture of monomers and polymers having silicon-nitrogen groups. Laine, Richard M.; Blum, Yigal (SRI International, USA). Can. CA 1301774 A1 **19920526**, 38 pp. (English). CODEN: CAXXA4. APPLICATION: CA 1986-509121 19860514.AB The Si-N compds., useful as ceramic precursors, are prepd. by cleaving Si-N bonds of precursor compds. in the presence of metal catalysts and H or H donors, and reacting the product to form silazanes, or by reaction of compds. bearing SiH groups and compds. bearing NH groups in the presence of catalysts [e.g., Ru<sub>3</sub>(CO)<sub>12</sub>] to form silazanes.IT **32169-90-7P**, Poly[imino(dimethylsilylene)]  
(prepn. of, catalytic, as ceramic precursor)

RN 32169-90-7 HCAPLUS

CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



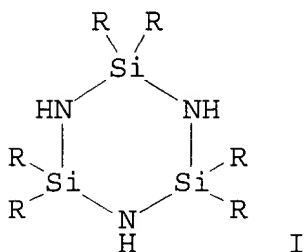
- IC C07F007-10; C08G077-54; C08G077-62  
 CC 35-6 (Chemistry of Synthetic High Polymers)  
 IT 27475-70-3P, Octamethylcyclotetrasilazane homopolymer  
**32169-90-7P**, Poly[imino(dimethylsilylene)] 39530-55-7P,  
 Dichlorodimethylsilane-hydrazine copolymer 69087-29-2P,  
 Ammonia-hexamethylcyclotrisilazane copolymer 103692-02-0P,  
 Ammonia-tetramethyldisilazane copolymer 105656-55-1P,  
 Ammonia-diethylsilane copolymer 105656-57-3P, Hydrazine-  
 tetramethyldisilazane copolymer 112906-76-0P, Ammonia-hexylsilane  
 copolymer 112906-77-1P, Ammonia-phenylsilane copolymer  
 112906-78-2P, Ammonia-ethylsilane copolymer 112906-79-3P  
 112906-80-6P, Poly[hydrazo(dimethylsilylene)] 112906-81-7P  
 113016-84-5P  
 (prep. of, catalytic, as ceramic precursor)
- L66 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
 1990:498753 Document No. 113:98753 Infusibilization of silazanes in  
 preparation of hollow ceramic fibers. Hayashida, Akira; Takamizawa,  
 Minoru; Takeda, Yoshihumi (Shin-Etsu Chemical Co., Ltd., Japan).  
 Eur. Pat. Appl. EP 361181 A2 **19900404**, 38 pp. DESIGNATED  
 STATES: R: DE, FR, GB. (English) CODEN: EPXXDW. APPLICATION: EP  
 1989-116673 19890908. PRIORITY: JP 1988-224593 19880909; JP  
 1988-253438 19881007.
- AB Silazanes are rendered infusible by reaction with gases contg. the  
 halides  $\text{RaSiX}_4\text{-a}$ ,  $\text{BX}_3$ ,  $\text{PX}_b$ , or  $\text{MX}_c$  [ $\text{M} = \text{Al, Ti, Fe, Ga, Ge, Zr, Nb,}$   
 $\text{Sn, Sb, Te, Ta, W, Bi}$ ;  $\text{R} = \text{H, alkyl, alkenyl, aryl}$ ;  $\text{X} = \text{Cl, Br, I}$ ;  $\text{a}$   
 $= 0\text{-}2$ ;  $\text{b} = 3 \text{ or } 5$ ;  $\text{c} = \text{valence of M}$ ] for pyrolysis to strong ceramic  
 fibers.  $\text{NH}_3$  gas was added at 90 mL/min to  $\text{SiHMeCl}_2$  83.38,  $\text{SiMeCl}_3$   
 22.59, and  $\text{SiMe}_2\text{Cl}_2$  16.0 in 1500 mL hexane for 1.25 h, giving 50.0 g  
 liq. which was added (40 g) in THF slowly to KH in THF, giving 36.5  
 g silazane (m.p. 143.degree.) (II). Fibers of II were treated with  
 0.02 mol/L  $\text{SiHCl}_3$  in N for 15 min at 50.degree., exposed to moist  
 air for 60 min at 50.degree., and heated at 150.degree./h to  
 1200.degree. for 30 min to give hollow fibers with tensile strength  
 150 kg/mm<sup>2</sup> and modulus 12 ton/mm<sup>2</sup>.
- IT **32169-90-7**, Poly[imino(dimethylsilylene)]  
 (infusibilization of, by metal halides for pyrolysis to ceramic  
 fibers)
- RN 32169-90-7 HCAPLUS  
 CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



IC ICM C08L083-16  
 ICS C08G077-62; C04B035-00  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 57  
 IT 27495-71-2, Hexamethylcyclotrisilazane homopolymer  
**32169-90-7**, Poly[imino(dimethylsilylene)] 113755-32-1  
 116968-63-9 127603-01-4  
 (infusibilization of, by metal halides for pyrolysis to ceramic fibers)

L66 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
 1990:119114 Document No. 112:119114 Preparation of  
 cycloorganotrisilazanes by quaternary ammonium halide-catalyzed  
 rearrangement of cycloorganopolysilazanes. Baile, Gnaneshwar R.;  
 Herman, John E.; Wyshak, Geoffrey M. (Dow Corning Corp., USA). U.S.  
 US 4855469 A **19890808**, 5 pp. (English). CODEN: USXXAM.  
 APPLICATION: US 1988-269522 19881109.

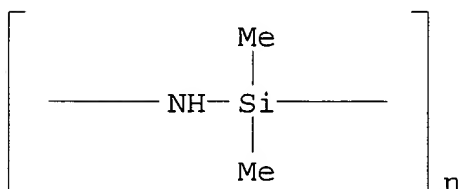
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AB Cycloorganotrisilazanes (I; R = H, alkyl, alkenyl, aryl, aralkyl)  
 are prepd. by heating cyclo-(R<sub>2</sub>SiNH)<sub>y</sub> (y .gtoreq. 4) in the presence  
 of (R<sub>1</sub>)<sub>4</sub>NX [R<sub>1</sub> = alkyl, alkenyl, aryl, alkylaryl; at least one R<sub>1</sub> is  
 C>11; X = halo]. Thus, a soln. of I (R = Me) (II) and  
 cyclo-(Me<sub>2</sub>SiNH)<sub>4</sub> (III) in hexane, having 80-85 wt.% hexane and ratio  
 II/III = 0.6, was treated with 5 wt.% (vs. II + III) Me(CH<sub>2</sub>)<sub>15</sub>N<sup>+</sup>Me<sub>3</sub>  
 Br<sup>-</sup> and stripped of hexane at 120.degree. and atm. pressure. Addnl.  
 hexane was added and stripped, followed by distn. at 115-150.degree.  
 and 35-50 mm Hg to give a distillate showing a II/III ratio of 182.  
 About 85% of initial II and III were recovered as a product contg.



99 wt.% II.  
 IT 32169-90-7D, Poly[imino(dimethylsilylene)], cyclic deriv.  
 (rearrangement of, to cyclohexamethyltrisilazane)  
 RN 32169-90-7 HCAPLUS  
 CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)

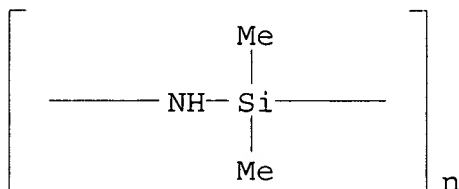


IC ICM C07F007-10  
 NCL 556409000  
 CC 29-6 (Organometallic and Organometalloidal Compounds)  
 IT 1020-84-4 32169-90-7D, Poly[imino(dimethylsilylene)],  
 cyclic deriv.  
 (rearrangement of, to cyclohexamethyltrisilazane)

L66 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
 1988:95150 Document No. 108:95150 Process for manufacture of  
 polysilazanes and related compounds, and their use. Blum, Yigal D.;  
 Laine, Richard M.; Schwartz, Kenneth B.; Platz, Robert M.;  
 Rowcliffe, David J.; Dodge, Allen L.; McLeod, Jonathan M.; Roberts,  
 Daryl L. (SRI International, USA). PCT Int. Appl. WO 8705298 A1  
 19870911, 106 pp. DESIGNATED STATES: W: AT, DE, GB, JP,  
 NL, US; RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE. (English).  
 CODEN: PIXXD2. APPLICATION: WO 1986-US2266 19861024. PRIORITY: US  
 1986-908685 19860304.

AB Silazanes and related compds. are prepd. by (a) mixing a precursor  
 contg. .gtoreq.1 Si-N bond, catalytically cleaving a Si-N bond in  
 the precursor in the presence of H or a H donor, and reacting the  
 cleavage product with a second cleavage product or with a compd.  
 contg. a Si-H bond and/or N-H bond to produce an initial silazane  
 having .gtoreq.1 newly formed Si-N bond, or (b) mixing .gtoreq.1  
 reactant which contains a Si-H bond and a N-H bond so as to cause a  
 reaction between these 2 bonds in the presence of a transition metal  
 catalysts and form an initial silazane having .gtoreq.2 Si-N bonds.  
 Further products may result from addnl. reactions of either type.  
 Novel compds., including siloxazanes and high mol. wt. polysilazanes  
 are prepd. These compds. may be pyrolyzed to yield ceramic  
 materials such as Si nitride, Si carbide, and Si oxynitride.  
 Fibers, coatings, binders, etc., may be prepd. from the title  
 compds. Thus, condensing 150 g Cl<sub>2</sub>SiH<sub>2</sub> into a -70.degree. flask,  
adding 198 g H<sub>2</sub>NHt over 2 h, stirring for 4 h, and warming overnight  
to room temp. gave 39.8 g of polysilazane (I, 81% yield) having  
no.-av. mol. wt. 490 and wt.-av. mol. wt. 1720. Fractionation of I  
at 150.degree. 300 .mu. gave 40% residue with no.-av. mol. wt. 420,  
and wt.-av. mol. wt. 2670.

IT 32169-90-7P  
 (prepn. of)  
 RN 32169-90-7 HCAPLUS  
 CN Poly[imino(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



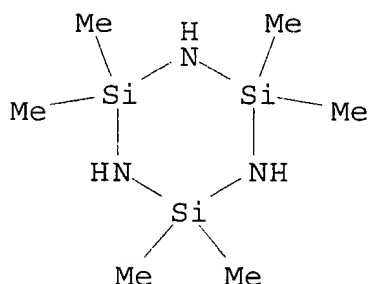
IC ICM C07F007-08  
 ICS C04B035-52; C04B035-56; C04B035-02; C04B035-08; C08G077-06;  
 C08G077-04; C08G077-26; B32B009-00; B32B015-00  
 CC 35-6 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 40, 42, 57  
 IT 124-40-3DP, reaction products with methylsiloxanes 2117-18-2P  
 2370-88-9DP, reaction products with dimethylamine 2587-46-4DP,  
 reaction products with ammonia 27475-70-3DP, trisilyl derivs.  
 32169-90-7P 39530-55-7P, Dichlorodimethylsilane-hydrazine  
 copolymer 69087-29-2P, Ammonia-hexamethylcyclotrisilazane  
 copolymer 86045-58-1P 90386-99-5P, Dichlorosilane-methyl amine  
 copolymer 103692-02-0P, Ammonia-tetramethyldisilazane copolymer  
 105656-55-1P, Ammonia-diethylsilane copolymer 105656-56-2P,  
 Ammonia-hydrazine-tetramethyldisilazane copolymer 105656-57-3P,  
 Hydrazine-tetramethylsilazane copolymer 112906-74-8P,  
 Dichlorosilane-ethyl amine copolymer 112906-75-9P,  
 Dichlorosilane-methyl amine-trichlorosilane copolymer  
 112906-76-0P, Ammonia-n-hexylsilane copolymer 112906-77-1P  
 112906-78-2P, Ammonia-ethylsilane copolymer 112906-79-3P,  
 Ammonia-1,1,3,3-tetramethyldisiloxane copolymer 112906-80-6P  
 112906-81-7P 112906-83-9P, Methylamine-silane copolymer  
 112906-90-8P 112906-91-9P 112906-92-0P 112906-93-1P  
 113016-84-5P  
 (prepn. of)

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L70 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
 2000:34439 Document No. 132:101603 Formation of silica films by  
 coating of polysilazanes. Shibuya, Tatsuhiko; Hagiwara, Yoshio  
 (Tokyo Ohka Kogyo Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
 2000012536 A2 20000114, 6 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1998-177523 19980624.  
 AB The title formation involves (1) prepg. a reformed polysilazane org.  
 soln. by reacting polysilazane and dialkylalkanolamine, (2) coating  
 the reformed polysilazane over a polysilicon circuit-formed  
 substrate, (3) drying, (4) presintering until disappearance of IR

absorption spectrum peaks around 800-880, 950, and 2200 cm<sup>-1</sup> to give a silica film, and (5) subsequently sintering at 550-800.degree.. The dialkylalkanolamine may be N,N-dimethylalkanolamine. The silica film as an insulator or leveling film prepd. by coating/sintering and not by CVD prevents excess diffusion in source/drain layers and provides increased crack stress limit.

IT **27495-71-2P**, Poly(hexamethylcyclotrisilazane)  
 (IR absorption spectrum peaks in; formation of silica films by coating of polysilazanes)  
 RN 27495-71-2 HCAPLUS  
 CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 1009-93-4  
 CMF C6 H21 N3 Si3

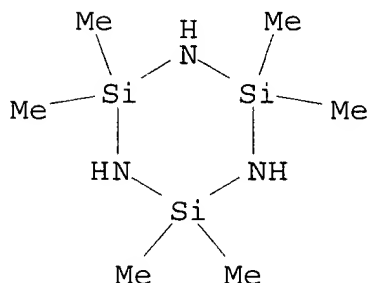


IC ICM H01L021-316  
 ICS H01L029-786; H01L021-336  
 CC 76-10 (Electric Phenomena)  
 IT **27495-71-2P**, Poly(hexamethylcyclotrisilazane)  
 (IR absorption spectrum peaks in; formation of silica films by coating of polysilazanes)

L70 ANSWER 2 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN .  
 1995:546576 Document No. 122:271665 Preparation of thermal shock-resistant insulation coatings on electric heating elements. Tyczkowski, Jacek (Polska Akademia Nauk Centrum Badan Molekularnych i Makromolekularnych, Pol.). Pol. PL 159205 B1 **19921130**, 5 pp. (Polish). CODEN: POXXA7. APPLICATION: PL 1988-272127 19880428.

AB The procedure involves etching of an elec. heating element in an inert gas plasma, deposition of a (Si + N + C)-contg. polymer layer in a low-temp. plasma, optional shaping (e.g., coiling) of the element, and pyrolysis in an O-contg. atm. at a temp. slowly increasing to 1250-1500 K. The polymer layer is elastic, and the coated heating elements can be shaped before pyrolysis. After the pyrolysis, the resulting insulation coating has an elec. breakdown resistance of .apprx.108 V/m and thermal shock resistance at temps.

involving excursions above 1600 K.  
 IT 27495-71-2D, Poly(hexamethylcyclotrisilazane), pyrolysis  
 product  
 (in prepn. of thermal shock-resistant insulation coatings on  
 elec. heating elements)  
 RN 27495-71-2 HCAPLUS  
 CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA  
 INDEX NAME)  
 CM 1  
 CRN 1009-93-4  
 CMF C6 H21 N3 Si3

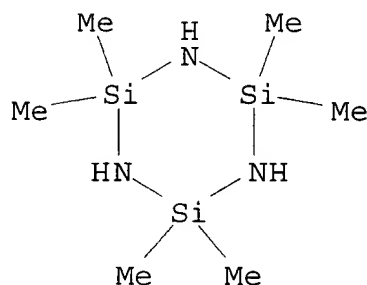


IC ICM C09D005-25  
 CC 56-6 (Nonferrous Metals and Alloys)  
 Section cross-reference(s): 42  
 IT 27495-71-2D, Poly(hexamethylcyclotrisilazane), pyrolysis  
 product 163001-31-8D, pyrolysis product  
 (in prepn. of thermal shock-resistant insulation coatings on  
 elec. heating elements)  
 L70 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
 1991:462733 Document No. 115:62733 Superconducting ceramic structure.  
 Nakamura, Takashi (Dow Corning Toray Silicone Co., Ltd., Japan).  
 Eur. Pat. Appl. EP 426136 A1 19910508, 8 pp. DESIGNATED  
 STATES: R: BE, DE, FR, GB. (English). CODEN: EPXXDW.  
 APPLICATION: EP 1990-120840 19901030. PRIORITY: JP 1989-284311  
 19891031.  
 AB A superconducting ceramic structure has a substrate whose surface  
 carries a film plasma-polymd. from a silazane bond-contg.  
 organosilicon compd. This structure is characterized by the absence  
 of deterioration in its superconducting properties, even upon  
 contact with water or water vapor.  
 IT 27495-71-2, Poly(hexamethylcyclotrisilazane)  
 (surface layers, on superconducting oxide ceramics)  
 RN 27495-71-2 HCAPLUS  
 CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA  
 INDEX NAME)

CM 1

CRN 1009-93-4

CMF C6 H21 N3 Si3



IC ICM C04B041-84

ICS H01L039-24; C09D183-16

CC 76-4 (Electric Phenomena)

Section cross-reference(s): 35, 57

IT 27475-70-3 27495-70-1, Poly(hexamethyldisilazane)

**27495-71-2**, Poly(hexamethylcyclotrisilazane) 135069-15-7

135069-16-8 135069-17-9

(surface layers, on superconducting oxide ceramics)

L70 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN

1990:479263 Document No. 113:79263 Controlling the catalytic polymerization of silazanes. Lebrun, Jean Jacques; Bordone, Christian; Bobichon, Charles (Rhone-Poulenc Chimie, Fr.). Eur. Pat. Appl. EP 364338 A1 **19900418**, 9 pp. DESIGNATED STATES: R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1989-402739 19891004. PRIORITY: FR 1988-13531 19881014.

AB In the title process, enabling control of the phys. and chem. properties of the products, the crude polymn. mixt. is treated with adsorbents. Heating 0.25 mol hexamethylcyclotrisilazane with CF3SO3H (2.10 mmol/kg silazane) in 58 g iso-Pr2O at 60.degree. for 105 min and heating the mixt. with 1% powd. activated charcoal at 60.degree. for 30 min gave a silazane contg. 2 ppm S which was stable in storage. Without charcoal treatment, the silazane contained 20 ppm S and formed significant amts. of ppt. on storage.

IT **27495-71-2P**, Hexamethylcyclotrisilazane polymer  
(manuf. of, polymn. control in)

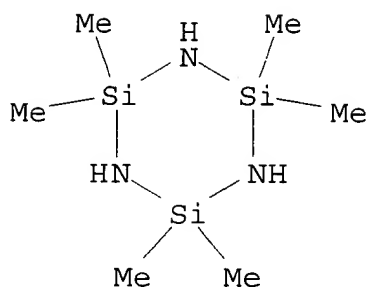
RN 27495-71-2 HCAPLUS

CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1009-93-4

CMF C6 H21 N3 Si3



IC ICM C08G077-62

ICS C04B035-00; C04B035-58

CC 35-6 (Chemistry of Synthetic High Polymers)

IT **27495-71-2P**, Hexamethylcyclotrisilazane polymer  
(manuf. of, polymn. control in)

L70 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN

1989:579625 Document No. 111:179625 Manufacture of fiber-reinforced ceramics. Sasa, Tadashi; Myahara, Kaoru; Koga, Arata (Ishikawajima-Harima Heavy Industries Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01087582 A2 **19890331** Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-246805 19870930.

AB Staple ceramic fibers, ceramic powder, and a liq. polymer precursor of ceramic material are mixed, shaped, and heat treated to convert the precursor to obtain fiber-reinforced ceramics. Ceramics prepd. by this method have high homogeneity and compactness, and various shaping method can be used to obtain ceramics in a complicated shape.

IT **27495-71-2**  
(ceramic precursor, in manuf. of ceramic fiber-reinforced ceramics)

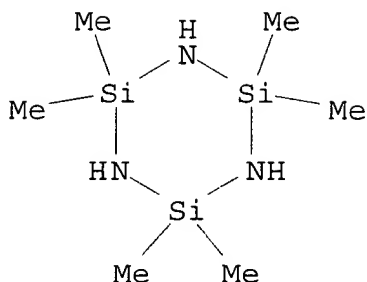
RN 27495-71-2 HCAPLUS

CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1009-93-4

CMF C6 H21 N3 Si3



IC ICM C04B035-80  
ICS C04B035-56; C04B035-58  
CC 57-2 (Ceramics)  
IT **27495-71-2** 70158-17-7  
(ceramic precursor, in manuf. of ceramic fiber-reinforced ceramics)

L70 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
1987:85702 Document No. 106:85702 Thermally stable silazanes as precursors for ceramics. Lebrun, Jean Jacques; Porte, Hugues (Rhone-Poulenc Recherches, Fr.). Fr. Demande FR 2577933 A1 **19860829**, 23 pp. (French). CODEN: FRXXBL. APPLICATION: FR 1985-2805 19850227.

AB The title compns., with increased mol. wt., are prepd. by treating polysilazanes or poly(disilylsilazanes) free of SiH groups with catalytic amts. of HClO<sub>4</sub> or CF<sub>3</sub>SO<sub>3</sub>H. Heating a silazane (prepd. by coammonolysis of 0.72 mol each Me<sub>2</sub>SiCl<sub>2</sub> and MeSiCl<sub>3</sub>) with 4500 ppm CF<sub>3</sub>SO<sub>3</sub>H at 140.degree. for 30 min gave 98% hard gum leaving a residue of 84% in TGA at 1300-1400.degree..

IT **27495-71-2P**, Hexamethylcyclotrisilazane polymer  
(manuf. of, as ceramic precursors, catalysts for)

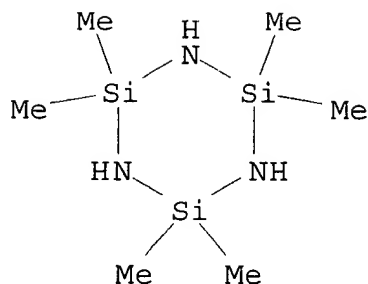
RN 27495-71-2 HCAPLUS

CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1009-93-4

CMF C6 H21 N3 Si3



IC ICM C08G077-62

ICA C04B035-58

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 57

IT **27495-71-2P**, Hexamethylcyclotrisilazane polymer  
(manuf. of, as ceramic precursors, catalysts for)

L70 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN

1982:528328 Document No. 97:128328 Plasma polymerization of cyclic or linear silazanes having organic groups. (Otsuka Pharmaceutical Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 57055928 A2

**19820403** Showa, 8 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1980-131052 19800920.

AB Cyclosilazanes, disilazanes, or trisilazanes having org. substituents are polymd. in plasmas. Thus, 5 g hexamethylcyclotrisilazane was plasma treated at 0.1 mm, 13.56 MHz, and 100 W for 60 min to give 2 g white solid polymer [ **27495-71-2**] and 0.4 g oily polymer.

IT **27495-71-2P**  
(prepn. of, by plasma polymn.)

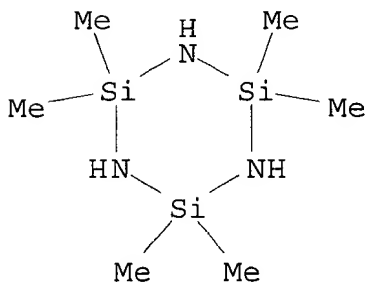
RN 27495-71-2 HCAPLUS

CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1009-93-4

CMF C6 H21 N3 Si3





IC C08G077-54  
CC 35-7 (Chemistry of Synthetic High Polymers)  
IT 27475-70-3P 27495-70-1P **27495-71-2P**  
(prepn. of, by plasma polymn.)

L70 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
1980:7173 Document No. 92:7173 Organopolysilazanes. Takamizawa,  
Minoru; Okamoto, Haruo; Ogawa, Masahiko; Koya, Kazuo (Shin-Etsu  
Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
54093100 **19790723** Showa, 5 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1977-160446 19771229.

AB High-mol.-wt. organopolysilazanes are prepd. by heating  
organopolysiloxane oligomers at 100-300.degree. in the presence of  
clay catalysts. Thus, 100 g hexamethylcyclotrisilazane (b.p.  
188.degree., f.p. -10.degree., viscosity 1.8 cSt), prepd. by  
treating Me<sub>2</sub>SiCl<sub>2</sub> with NH<sub>3</sub>, and 1 g activated kaolin were heated to  
130.degree. under N with evolution of NH<sub>3</sub> and CH<sub>4</sub> and then gradually  
to 220.degree.. n-Hexane (10 mL) was added to the cooled reaction  
mixt., the clay was filtered off, and the solvent was distd. at  
250-80.degree./2-3 min to give 68 g pale yellow methylpolysilazane  
having viscosity 2630 cSt, refractive index 1.475, and sp. gr.  
0.792. A colorless, hexagonal cryst. solid filtered off with the  
clay was stable to hydrolysis, had b.p. 341.degree. and m.p.  
164.degree., and was assumed to be 2,2,4,4,6,6,8,8,10,10,12,12,13-  
tridecamethyltricyclo[7.3.1.0<sup>5,13</sup>]heptasilazane [1101-18-4].

IT **27495-71-2P**

(manuf. of, catalysts for)

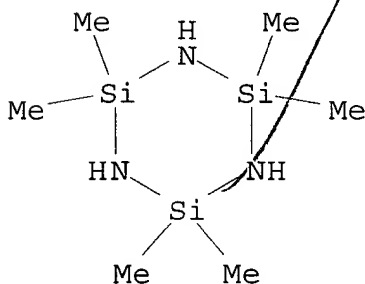
RN 27495-71-2 HCAPLUS

CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA  
INDEX NAME)

CM 1

CRN 1009-93-4

CMF C6 H21 N3 Si3



IC C08G083-00  
CC 35-3 (Synthetic High Polymers)  
Section cross-reference(s): 28, 29

IT 27475-70-3P 27475-71-4P **27495-71-2P** 27616-39-3P  
(manuf. of, catalysts for)

L70 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
1972:551710 Document No. 77:151710 Nitriles from carboxylic acids.  
Bakassian, Georges; Lefort, Marcel (Rhone-Poulenc S. A.). Ger.  
Offen. DE 2205360 **19720817**, 11 pp. (German). CODEN:  
GWXXBX. APPLICATION: DE 1972-2205360 19720204.

AB Nitriles RCN (R = Me, PhCH<sub>2</sub>, o- and p-HOC<sub>6</sub>H<sub>4</sub>, p-NCC<sub>6</sub>H<sub>4</sub>, or  
4-pyridyl) and pure (Me<sub>3</sub>Si)<sub>2</sub>O or poly(dimethyl-cyclosiloxanes) were  
simultaneously prep'd. by reaction of RCO<sub>2</sub>H with (Me<sub>3</sub>Si)<sub>2</sub>NH or  
poly(dimethylcyclosilazanes), resp., in the presence of AlCl<sub>3</sub> or  
ZnCl<sub>2</sub>. Thus, o-HOC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H 55, (Me<sub>3</sub>Si)<sub>2</sub>NH 161, and ZnCl<sub>2</sub> 2 g were  
heated in an autoclave within 5 hr to 185.degree. (the pressure rose  
to 44 bar) to give 72 g (Me<sub>3</sub>Si)<sub>2</sub>O and 48 g o-Me<sub>3</sub>SiOC<sub>6</sub>H<sub>4</sub>CN (I). I  
was hydrolyzed to give 27 g o-HOC<sub>6</sub>H<sub>4</sub>CN and 19 g (Me<sub>3</sub>Si)<sub>2</sub>O.

IT **27495-71-2**  
(reaction of, with carboxylic acids)

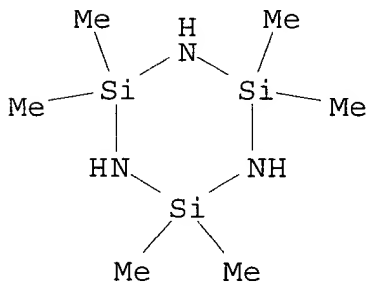
RN 27495-71-2 HCAPLUS

CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA  
INDEX NAME)

CM 1

CRN 1009-93-4

CMF C6 H21 N3 Si3



IC C07C; C07D

CC 25-20 (Noncondensed Aromatic Compounds)  
Section cross-reference(s): 29

IT 999-97-3 **27495-71-2**  
(reaction of, with carboxylic acids)

L70 ANSWER 10 OF 10 HCAPLUS COPYRIGHT 2003 ACS on STN  
1964:484711 Document No. 61:84711 Original Reference No. 61:14802e-f  
Catalytic polymerization of silazanes. (Dow Corning Corp.). GB  
968110 **19640826**, 3 pp. (Unavailable). PRIORITY: US  
19601201.

AB Silazanes from di-, tri-, and tetrafunctional chloro-silanes and NH<sub>3</sub>  
or a primary amine are further polymerized to solids or viscous

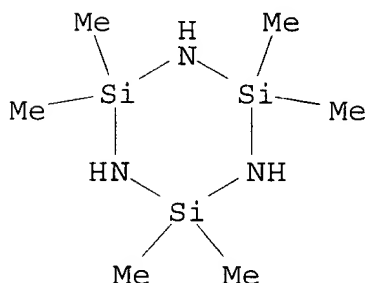
liquids (depending on the silazane) with im-proved adhesive, coating, and film-forming properties. The catalyst (.ltoreq.2% by wt.) is a salt of Ag, Hg, Co, or other metal with HCl, H<sub>2</sub>SO<sub>4</sub>, HNO<sub>3</sub>, HClO<sub>3</sub>, or H<sub>3</sub>PO<sub>3</sub>. The reaction at .ltoreq.220.degree. for 1-24 hrs. evolves NH<sub>3</sub> and probably gives branched Si-N bonds. Thus, 10 cc. of liquid hexamethylcyclotrisilazane (n<sub>25D</sub> 1.4419) and 0.1 g. HgSO<sub>4</sub> were refluxed for 23 hrs. at 200.degree.. The product was a clear, colorless, viscous liquid (n<sub>25D</sub> 1.4597).

IT 27495-71-2, Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-,  
homopolymer  
(prepn. of)  
RN 27495-71-2 HCAPLUS  
CN Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-, homopolymer (9CI) (CA  
INDEX NAME)

CM 1

CRN 1009-93-4

CMF C6 H21 N3 Si3



IC C08G  
CC 45 (Synthetic High Polymers)  
IT 27495-71-2, Cyclotrisilazane, 2,2,4,4,6,6-hexamethyl-,  
homopolymer  
(prepn. of)